

Appl. No. 09/270,128

Amendment Dated November 7, 2007

Reply to Office Action Dated May 11, 2007

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Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims:

Please amend the claims as follows without prejudice. No new matter has been added by way of these amendments.

We claim:

1. (Currently amended) In a simulation system used by an operator and including a source of input data, a display, and a simulator adapted to be executed by a processor and generating a set of simulation results during the execution in response to said input data, an organizing and managing system operatively interconnected between the source of the input data and said simulator and said display, comprising:

a case manager adapted for storing a plurality of sets and supersets of test data files, wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, said sets and supersets of test data files being stored in said case manager in the form of a hierarchical, non-conventional tree like structure, having a root and one or more leaves, the tree like structure being non-conventional in that one or more of said supersets underlie corresponding ones of said sets in said tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, and further comprising one or more of said sets and said supersets of said test data files adapted to be selected by said operator; and

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editing means responsive to said one or more of said sets and said supersets of said test data files selected by said operator via said case manager and responsive to said input data for editing said test data files and said input data in response to editing actions taken by said operator and generating a set of edited test data files, said simulator generating said set of simulation results during the execution of said simulator in response to said set of edited test data files.

2. (Original) The organizing and managing system of claim 1, wherein said editing means comprises:

a case builder adapted for receiving a first set of keywords associated with said input data and a second set of keywords associated with said one or more of said sets and said supersets of said test data files selected by said operator via said case manager for editing said first set of keywords and said second set of keywords in response to editing actions taken by said operator thereby generating a third set of keywords; and
a simulation file adapted for storing said third set of keywords.

3. (Original) The organizing and managing system of claim 2, wherein said editing means further comprises:

a run manager adapted for receiving said third set of keywords from said simulation file and submitting said third set of keywords to said simulator,
said simulator using said third set of keywords from said simulation file during its execution by the processor and, responsive thereto, generating said set of simulation results.

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4. (Original) The organizing and managing system of claim 3, wherein said display includes a results viewer, said results viewer adapted to display said set of simulation results generated from said simulator.

5. (Original) The organizing and managing system of claim 4, wherein said display includes a report generator, said report generator adapted to generate a report describing said set of simulation results generated from said simulator.

6. (Original) The organizing and managing system of claim 3, wherein said run manager includes monitoring means for monitoring said third set of keywords received from said simulation file.

7. (Original) The organizing and managing system of claim 6, further comprising a results file adapted to be operatively connected to said simulator for receiving said set of simulation results from said simulator and storing said set of simulation results therein, said run manager receiving said third set of keywords from said simulation file and said set of simulation results from said results file thereby allowing said third set of keywords to be compared by an operator with said set of simulation results.

8. (Original) The organizing and managing system of claim 7, wherein said display includes a results viewer connected to said results file, said results viewer adapted to display said set of simulation results received from said results file.

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9. (Original) The organizing and managing system of claim 8, wherein said display includes a report generator connected to said results file, said report generator adapted to generate a report describing said set of simulation results received from said results file.

10. (Currently amended) In a simulation system used by an operator, a method for generating a set of simulation results in response to a set of input data and displaying said set of simulation results, comprising the steps of:

storing said input data in a case manager storage medium in the form of a hierarchical, non-conventional tree like structure, said input data including a plurality of sets of data and a plurality of supersets of said data, wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set, said sets of said data and said supersets of said data being stored in said case manager storage medium in the form of said tree like structure, having a root and one or more leaves, said tree like structure being non-conventional in that supersets underlie corresponding ones of said sets in said tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, and with said sets of said data and said supersets of said data adapted to be selected by said operator;

generating said sets of said data from said case manager storage medium when said sets of data are selected by said operator;

submitting said sets of data to a simulator in response to the generating step, said simulator executing and generating said set of simulation results in response to said sets of data;

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and

displaying said set of simulation results.

11. (Original) The method of claim 10, wherein the submitting step comprises the steps of:

editing a first set of keywords representing said sets of data and generating a second set of

keywords representing edited versions of said sets of data; and

submitting said second set of keywords to said simulator in response to the editing step, said

simulator executing and generating said set of simulation results in response to said

second set of keywords.

12. (Original) The method of claim 11, wherein the displaying step comprises the steps of:

storing said set of simulation results, which are generated from said simulator, in a results file;

and

displaying said set of simulation results which are stored in said results file.

13. (Original) The method of claim 12, wherein the step of storing said set of simulation results in a results file comprises the steps of:

comparing said second set of keywords submitted to said simulator with said set of simulation

results stored in said results file; and

storing said set of simulation results, which are generated from said simulator, in a results file.

14. (Original) The method of claim 13, wherein the step of displaying said set of simulation results which are stored in said results file comprises the steps of:

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displaying said set of simulation results via a results viewer and generating a report documenting said set of simulation results via a report generator.

15. (Currently amended) A simulation system responsive to a plurality of sets of input data for simulating an earth formation located in the vicinity of an oilfield reservoir, generating a set of simulation results in response to the simulation, and displaying the set of simulation results, comprising:

case manager means for organizing and managing the plurality of sets of input data being used by the simulation system, said case manager means including a plurality of sets of case scenarios and a plurality of supersets of case scenarios, wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, said plurality of sets and plurality of supersets being organized in a hierarchical, non-conventional tree-like structure, having a root and one or more leaves, the tree like structure being non-conventional in that some of said case scenarios being supersets of other of said case scenarios in the tree-like structure with said supersets underlying corresponding ones of said sets in said tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, and further comprising an operator selecting one or more of the case scenarios in the case manager;

case builder means for receiving said one or more of the case scenarios selected by the operator, editing or changing a set of data disposed within the selected case scenarios in response to editing actions taken by the operator, and, responsive thereto, generating a set of edited

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case scenarios;

run manager means responding to the set of edited case scenarios from the case builder means for submitting the edited case scenarios to a simulator, the simulator responding to the edited case scenarios from the run manager means by executing and thereby generating the set of simulation results, the set of simulation results from the simulator being stored in a results file;

results viewer means for displaying the set of simulation results generated by the simulator, the results viewer displaying the set of simulation results and any instantaneous changes being made to the set of simulation results at any point in time; and

report generator means for generating one or more reports which record the set of simulation results.

16. (Currently amended) A device, comprising:

means for storing instructions which are executable by a processor of a computer, said instructions adapted for use by a simulation system for generating a set of simulation results in response to a selected set of data and displaying the set of simulation results, said instructions when executed by said processor of said computer conducting a process comprising the steps of:

presenting for display a hierarchical,, non-conventional tree like structure representing a plurality of sets of data and a plurality of supersets of said data wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, said plurality of sets and plurality of supersets

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being stored therein in the form of said tree like structure, having a root and one or more leaves, the tree like structure being non-conventional in that said supersets underlie corresponding ones of said sets in said tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, with said plurality of sets of data and said plurality of supersets of data adapted to be selected by an operator via said tree like structure on said display;

presenting for display an editing means when said plurality of sets of data or said plurality of supersets of data are selected by said operator via said tree like structure on said display, said data adapted to be edited by said operator via editing means on said display thereby generating edited data; and

submitting said edited data to a simulator when said data is edited by said operator via said editing means on said display.

17. (Original) The device of claim 16, further comprising:

receiving a set of simulation results from said simulator when said edited data is submitted to said simulator; and

storing said set of simulation results in a results file.

18. (Original) The device of claim 17, further comprising:

monitoring said edited data submitted to said simulator, and

comparing said edited data submitted to said simulator with said set of simulation results generated from said simulator.

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19. (Original) The device of claim 18, further comprising transmitting to a display said set of simulation results which are stored in said results file approximately simultaneously with the monitoring of said set of simulation results.

20. (Currently amended) A simulation system, comprising:

a case manager adapted for storing input data therein and organizing said input data in said case manager in a hierarchical, non-conventional tree like structure, having a root and one or more leaves, said input data including a set of data and a corresponding superset of said set of data, wherein the each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, the tree like structure being non-conventional in that said superset of said set of data underlies said set of data in said tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, a superset storing data therein which is also stored in a corresponding set of data but said superset further storing additional data therein which is not stored in said corresponding set of data, with at least one of said set of data and said corresponding superset of said set of data adapted to be selected by an operator from the tree like structure of said case manager;

a simulator responsive to said at least one of said set of data and said corresponding superset of said sets of data which is selected by said operator from the tree like structure in said case manager adapted for executing and using, during the execution, said at least one of said set of data and said corresponding superset of said set of data thereby generating a set of

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simulation results; and

means for displaying or recording said set of simulation results.

21. (Previously presented) The simulation system of claim 20, further comprising:

a case builder operatively connected to said case manager and responsive to said at least one of said set of data and said corresponding superset of said set of data which is selected by said operator from the tree like structure of said case manager adapted for allowing said operator to edit said at least one of said set of data and said corresponding superset of said set of data which is selected by said operator from the tree like structure of said case manager thereby generating edited data.

22. (Currently amended) A device adapted for storing instructions which, when executed by a processor, conducts a process comprising the steps of:

executing a simulator using input data during the execution of said simulator,

wherein the step of executing said simulator using said input data during the execution of said simulator includes the steps of,

(a) accessing a case manager, said case manager including at least one set of data and at least one superset of said set of data, wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, said at least one set and at least one superset being organized in said case manager in a hierarchical, non-conventional tree like structure, having a root and one or more leaves, the tree like structure being non-conventional in that said superset of said set of data underlies said set of data in said tree like structure, such that one or more

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of said sets is situated between the root and the corresponding superset, said set of data including a first group of data, said superset of said set of data including said first group of data plus additional data which is not included in said set of data,

- (b) selecting, by an operator, either said set of data or said superset of said set of data, the data selected during the selecting step (b) representing said input data used by said simulator during said execution of said simulator, and
- (c) executing said simulator using said data selected during the selecting step (b).

23. (Previously presented) A device of claim 22, wherein the step of executing said simulator using said input data during the execution of said simulator further includes the steps of:

- (d) editing the data selected during the selecting step (b) thereby creating edited data, the edited data representing said input data used by said simulator during said execution of said simulator.

24. (Currently amended) In a simulation system including a case manager and a simulator operatively connected to said case manager, said case manager including a plurality of sets of data and a corresponding plurality of supersets of data, wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, the plurality of sets of data and the plurality of supersets of data being organized together in said case manager in the form of a hierarchical, non-conventional tree like structure, having a root and one or more leaves, each of said sets of data including a group of data, each of the corresponding supersets of data including said group of data plus additional data

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not included within the corresponding sets of data, the tree like structure being non-conventional in that the supersets of said set of data underlie the corresponding sets of data in the tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, a method of performing a simulation, comprising the steps of:

- (a) selecting, by an operator, at least one of said sets of data or at least one of said supersets of data in said tree like structure of said case manager, the selected data being generated from said case manager when the selected data is selected by said operator,
- (b) receiving said selected data, selected by said operator during the selecting step (a), in said simulator, and
- (c) performing, by said simulator, said simulation and using, by said simulator, said selected data which is received in said simulator during the receiving step (b).

25. (Previously presented) The method of claim 24, wherein said simulation system further includes a case builder operatively interposed between said case manager and said simulator and adapted for editing said selected data generated from said case manager when said selected data is selected by said operator during the selecting step (a), further comprising the steps of:

- (d) when the selected data is generated from said case manager in response to the selecting steps (a), editing by said operator, said selected data in said case builder thereby generating edited data, said edited data being received in said simulator during the receiving step (b), said simulator performing said simulation and using edited data in the simulation during the performing step (c).

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26. (Currently amended) A device adapted for storing instructions and adapted to be disposed in a computer, said instructions adapted to be executed by a processor of said computer when said device is disposed in said computer, said processor performing method steps for performing a simulation in a simulation system when said instructions are executed by said processor of said computer, said simulation system including a case manager and a simulator operatively connected to said case manager, said case manager including a plurality of sets of data and a corresponding plurality of supersets of data wherein each set and superset is a test data file for performing a simulation, each superset defining a case scenario of its related set ~~superset of its related sets~~, the plurality of sets of data and the plurality of supersets of data being organized together in said case manager in the form of a hierarchical, non-conventional tree like structure, having a root and one or more leaves, each of said sets of data including a group of data, each of the corresponding supersets of data including said group of data plus additional data not included within the corresponding sets of data, the tree like structure being non-conventional in that the supersets of said set of data underlie the corresponding sets of data in the tree like structure, such that one or more of said sets is situated between the root and the corresponding superset, said method steps for performing said simulation in said simulation system comprising the steps of:

- (a) selecting, by an operator, at least one of said sets of data or at least one of said supersets of data in said tree like structure of said case manager, the selected data being generated from said case manager when the selected data is selected by said operator,
- (b) receiving said selected data, selected by said operator during the selecting step (a), in said simulator, and

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(c) performing, by said simulator, said simulation and using, by said simulator, said selected data which is received in said simulator during the receiving step (b).

27. (Previously presented) The device of claim 26, wherein the simulation system further includes a case builder operatively interposed between said case manager and said simulator and adapted for editing said selected data generated from said case manager when said selected data is selected by the operator during the selecting step (a), further comprising the steps of:

(d) when the selected data is generated from said case manager in response to the selecting step (a), editing, by said operator, said selected data in said case builder thereby generating edited data, said edited data being received in said simulator during the receiving step (b), said simulator performing said simulation and using edited data in the simulation during the performing step (c).